

## Appendix II

### VEHICLE LOADING DATA

#### EQUIPMENT CHARACTERISTICS

##### I. TRUCKS AND PERSONNEL CARRIER\*

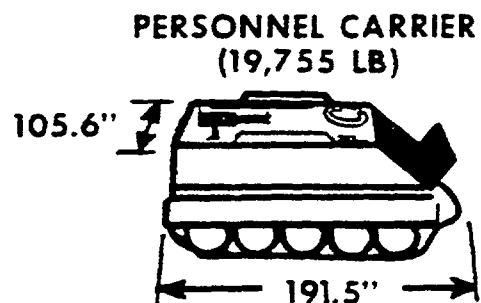
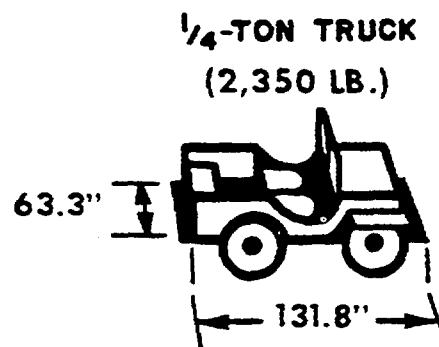
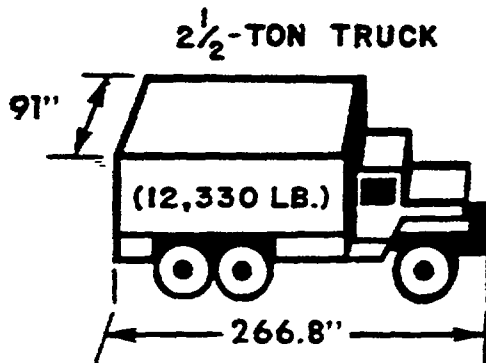
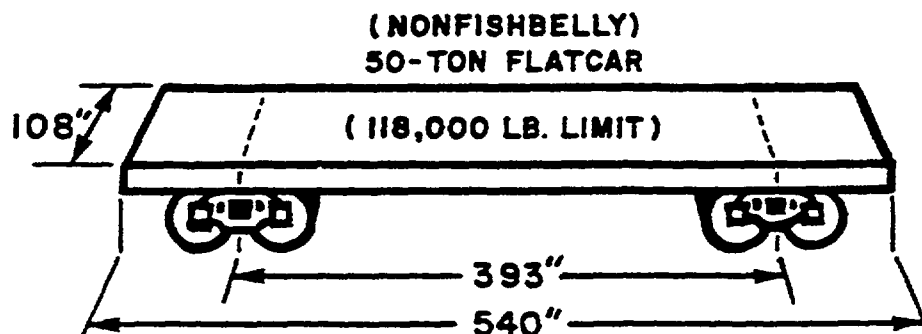
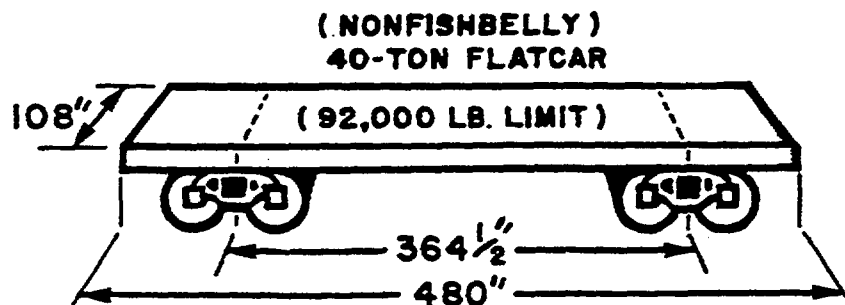
	Configuration	Length	Width	Height	Weight	Cube	Loaded Height
Trk Cargo 2 1/2-Ton	M135 Operational	266.8	91.0	116.3	12840	1634.0	81.0
	M135 Reduced	266.8	88.0	79.8	12840	1084.2	
Trk Utility 1/4-Ton	M151 Operational	131.8	63.3	71.0	2350	342.8	
	M151 Reduced	131.8	63.3	52.5	2350	253.5	
Carrier Pers Ftrac	M113 Operational	191.5	105.6	86.5	19755	1012.3	
	M113 Reduced	191.5	100.0	86.5	19755	958.6	

\* Data extracted from TB 55-46

## II. RAIL CARS

Type	Capacity				Weight empty (tons)	Inside dimensions (ft)		
	Tons	Men (8 sq ft per man and equipment)	Animals (horses, mules, oxen—avg. width, 22 inches)	Cubic feet		Length	Width	Height
Automobile.....	40	45	22	3,100	20	40.5	8.5	9
	50	58	27	4,702	25	50.6	9.2	10.1
Baggage.....					45	60	9.1	8
Box.....	30	38	20	2,750	18	36	8.5	9
	40	43	22	3,100	20	40.5	8.5	9
	50	43	22	3,100	24	40.5	8.5	9
Caboose.....					20	27.5	8.2	7
Diner.....					90	78.5	8.5	8.5
→ Flat.....	40				18	40	9	
	50				20	45	9	
	70				25	50	9	
→ Gondola.....	50			1,570	22	40	9.9	4
	70			1,920	25	48	10	4
Refrigerator.....	30			2,570	28	40.5	8.2	7.2

### III. EQUIPMENT OUTLINES

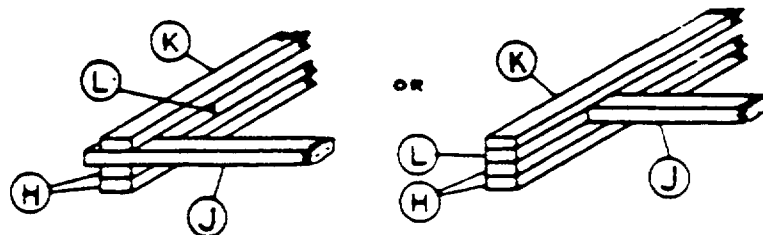
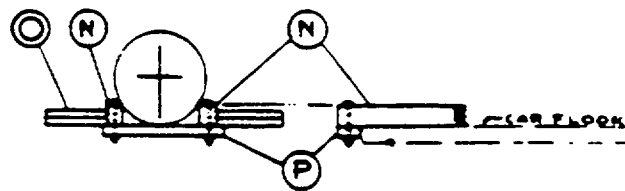
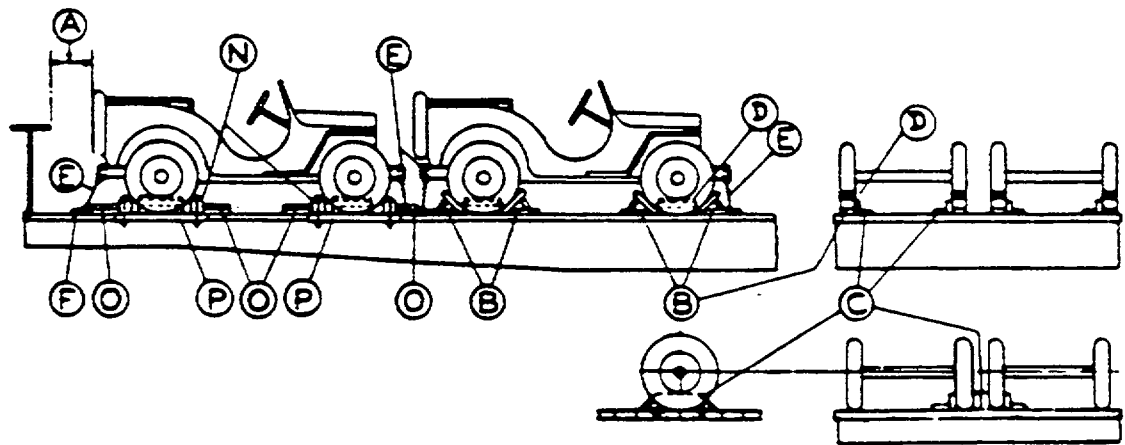
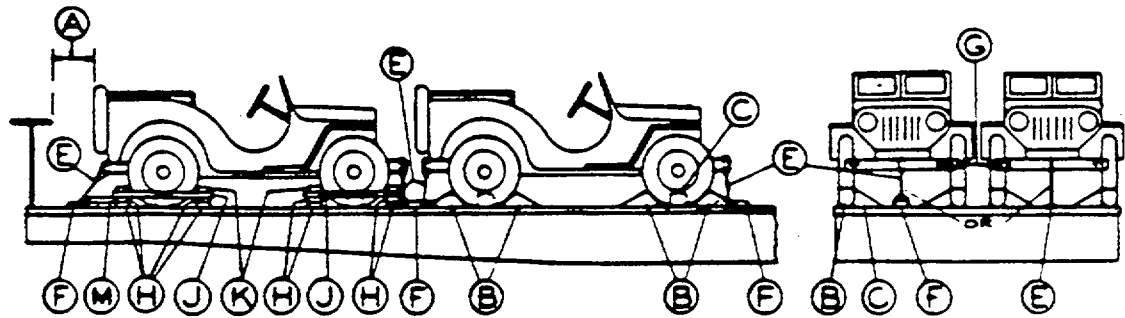


--- TRUCK  
CENTERS

SCALE  
1:100 (APPROX)

# IV. LOADING DIAGRAMS

## 1/4-TON TRUCK



# 1/4-TON TRUCK (Cont)

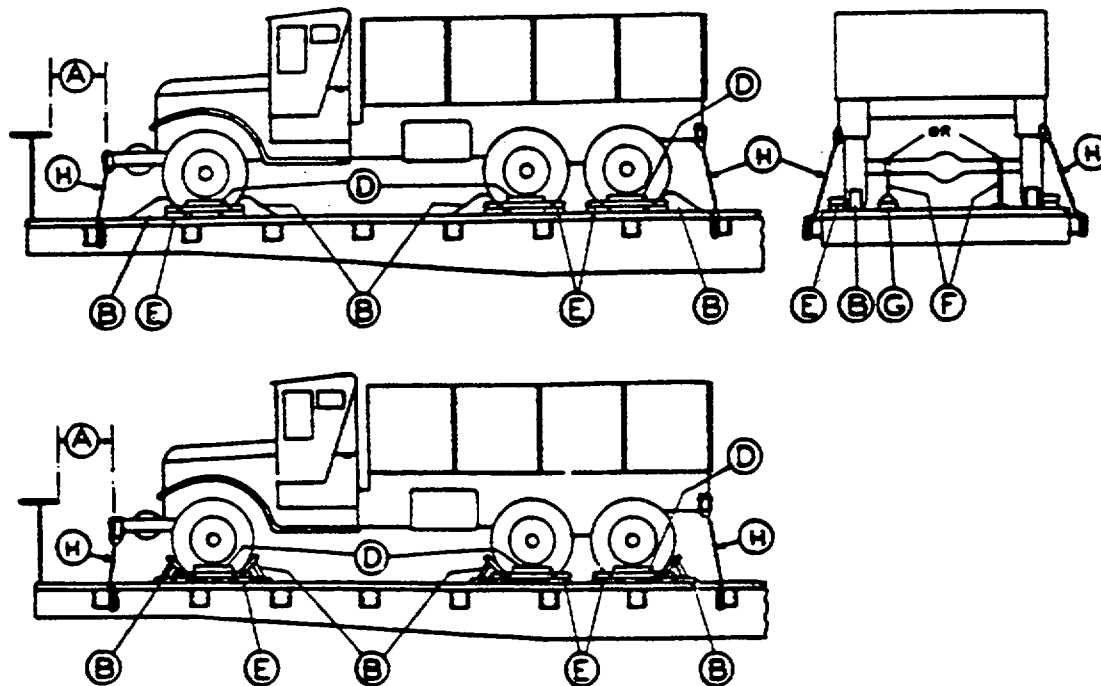
Item	No. of pieces	Description
A	8 per unit	Brake wheel clearance. See figure 18.
B		Blocks, pattern 25. Locate 53" portion of block against front and rear of wheels. Secure heel of block to floor with three 40d nails and toe-nail that portion under tire to floor with two 40d nails. Substitute, if desired, at each location, blocks pattern 24, or blocks, pattern 18. When units are loaded, side by side on flatcars, item B not required against inside of inside front and rear wheels. Item B not required when items H, J, K, and L, or N, O, and P are used.
C	1 each wheel	Blocks, pattern 25. Locate 35" portion against inside of each wheel and secure heel of block to floor with three 40d nails and toe-nail other end to floor with one 40d nail. Substitute, if desired, at each location, blocks, pattern 20. Secure to floor with four 30d nails at each location. If desired, each block, pattern 25, or pattern 20, located against wheels nearest side of car may be omitted, provide double 2-in. x 4-in. x 24-in. block is used between inside wheels of side by side units to prevent contacting each other. Secure lower piece to floor with four 20d nails and top piece to one below with four 30d nails in each. Not required when items H, J, K, and L are used.
D	1 each wheel	Suitable material, such as waterproof paper, burlap, etc. Locate bottom portion under item C, top portion to extend 2-in. above item C. Not required when blocks, pattern 25 or items H, J, K, and L, or N, O, and P are used.
E	2 each unit	1 in. No. 14 B. W-gage hot-rolled steel, with anchor plates, pattern 19. Locate over bumper at front end and through pulling hook at rear end and secure each plate to floor with eight 20d cement-coated nails. Substitute, if desired, at each location, 4 strands No. 8-gage black-annealed wire. Pass over bumper or through pulling hook, underneath and around item F. After car springs have been compressed as much as possible, bring both ends together, and twist taut after item F has been nailed in place.
F	1 each item E	2-in. x 4-in. x 18-in. Locate one under front bumper at center of unit and one under rear pulling hook. Secure each to floor with four 30d nails. Not required when steel straps, pattern 19, are used.
G	1 each end of each unit	6 strands, 3 wrappings, No. 8-gage black-annealed wire. Pass around pintle hook of one unit and around frame of adjacent unit, or around pintle hooks or frames of adjacent units.
H	4 each unit	Each to consist of two pieces of 2-in. x 4-in. long enough to extend to outside face of outside tires of unit loaded side by side and long enough to admit of application of item J on units loaded in single row. Locate so that item K will contact tires of wheels. Secure lower piece to floor with ten 30d nails and top piece to one below in like manner. Not required when items B and C or N, Q, and P are used.
J	1 each outside wheel	2-in. x 4-in., long enough to extend 2-in. beyond outside face of item H, or item N when used on units loaded in single row. Locate against wheel and secure to each item H or item N with three 20d nails. Not required when items B and C or N, O, and P are used.
K	4 each unit	2-in. x 4-in., length equal to length of item H. Locate against tires, on top of items J and L. Secure items J and L with three 20d nails at each location. Not required when items B and C or N, O, and P are used.
L	2 each item J	2-in. x 4-in. x 12-in. Locate between items H and K with one end against item J. Secure to item H with two 20d nails in each. Not required when items B and C or N, O, and P are used.
M	2 each end of load	Each to consist of two pieces of 2-in. x 4-in. x 18-in. Locate on floor with one end against item H. Secure lower piece to floor with four 30d nails and top piece to one below with four 20d nails. Not required when items B and C or N, O, and P are used.

# 1/4-TON TRUCK (Cont)

Item	No. of pieces	Description
N	4 each single or side by side row	4-in. wide, 6-in. high, long enough to extend to outside face of outside tires of units loaded side by side and long enough to admit of application of item J on units loaded in single row. Locate against front and rear tires. Toe-nail to floor with four 30d nails. Not required when items B or H, J, K, and L are used.
O	4 each item N	Each to consist of two pieces of 2-in. x 4-in. x 18-in. Locate one near each end and two near center of item N. Secure lower piece to floor, lengthwise of car, with four 30d nails and top piece to one below in like manner. Not required when items B, or H, J, K, and L are used.
P	1 each item N	2-in. x 4-in. long enough to extend 1-in. beyond outside face of item N. Locate 2-in. edge against end of floor, under item N. Secure each end to item N with one 1/2-in. diameter bolt. Multiple length pieces may be used provided they protect two or more complete units and are secured to each item N throughout their length. Not required when items B or H, J, K, and L are used.

Handbrakes must be set and levers wired or blocked. See General Rules for further details.

# 2 1/2-TON TRUCK



Item	No. of pieces	Description
A		Brake wheel clearance. See figure 22.
B	8	6-in. x 8-in. x 24-in. blocks, pattern 16. Locate 45° portion of blocks against front and rear of front wheels, in front of outside intermediate wheels and in back of outside rear wheels. Nail heel of block to floor with three 40d nails in a triangular pattern and toe-nail that portion under tire to floor with two 40d nails one on either side before items D and E are applied. Substitute, if desired, at each location, pattern 17, or blocks, pattern 18, secured to floor as shown.
D	1 each outside wheel	Suitable material, such as waterproof paper, burlap, etc. Locate bottom portion under item E, top portion to extend 2 inches above item E.
E	6	Each to consist of two pieces of 2-in. x 4-in. x 36-in. Nail lower piece to floor with four 30d nails and top piece to the one below with four 30d nails.
F	2 each axle	1-in. No. 14 R. W-gage hot-rolled steel, with anchor plates, pattern 19. Locate over axle, springs, or spring shackles and secure each plate to floor with eight 20d cement-coated nails. Substitute, if desired, at each location, four strands No. 8-gage black-annealed wire, or wires of equivalent strength. Pass over axle, springs, spring shackles, underneath and around item G and twist taut after item G has been nailed in place.
G	1 each item F	2-in. x 4-in. x 18-in. cleats. Nail to floor lengthwise of car, with four 30d nails. Not required when steel straps are used, per pattern 19.
H	4 each unit	Four strands No. 8-gage black-annealed wire, or wires of equivalent strength. Attach to each corner of machine and to stakepockets and twist taut with rod.

# TANKS AND SIMILAR UNITS 60,000 POUNDS AND UNDER

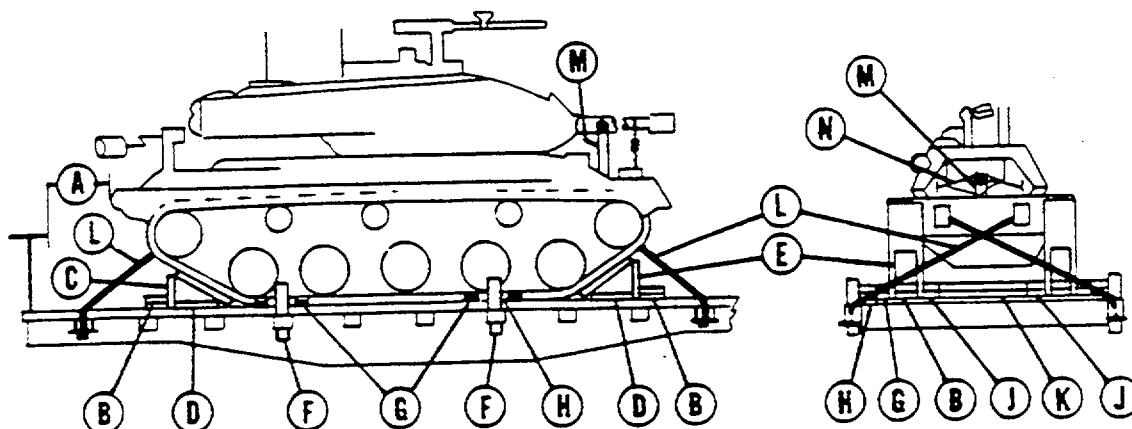


Figure 35. Loading tanks and similar units, 60,000 pounds and under, flatcars.

Item	No. of pieces	Description
A	-----	Brake wheel clearance. See figure 35.
B	2 -----	Blocks, pattern 30. Locate one against each front crawler tread.
C	2 -----	Blocks, pattern 31. Locate one against each rear crawler tread.
D	2 each items B and C	2-in. x 4-in. x 20-in. Locate one on each side of items B and C and secure each to floor with six 30d nails.
E	1 each items B and C	Each to consist of two pieces of 2-in. x 4-in. x 12-in. Locate against ends of items B and C. Secure lower piece to floor with four 30d nails and top piece to one below in like manner.
F	2 each side of unit	Side stakes. Must extend 2 inches below stakepocket and 8 inches above car floor. Locate one each in first stakepocket to the right of and to the left of stakepocket nearest center of tank. Not required when items J and K are used.
G	2 each side of unit	Each to consist of two pieces of 2-in. x 4-in. x 24-in. Locate against crawler treads, with centers opposite item F. Secure lower piece to floor with six 30d nails and top piece to one below in like manner. Not required when items J and K are used.
H	As required -----	2-in. x 6-in. x 12-in. Center on item F and toe-nail each to floor with one 30d nail in each end. Use sufficient pieces to completely fill space between items F and G. Not required when items J and K are used.
J	2 each unit -----	Each to consist of two pieces of 2-in. x 4-in. x 14-ft. Locate on floor against inside of each crawler tread and secure lower piece to floor with twelve 30d nails and top piece to one below in like manner. Not required when items F, G, and H are used.
K	3 each unit -----	Each to consist of two pieces of 2-in. x 4-in. long enough to fill space between item J. Secure lower piece to floor with four 30d nails and top piece to one below in like manner. Not required when items F, G, and H are used.
L	4 each unit -----	Tie rods, size as indicated in note to figure 17*. Attach to lifting lugs and pass through stakepockets and 1/2-in. x 4-in. x 10-in. plates underneath stakepockets on opposite sides of car. Substitute, if desired, 3/4-in. x 6-in. x 19-in. steel cable, doubled.

\* 7/8-inch in diameter for vehicles weighing 10,000 to 20,000 pounds.



## TANKS AND SIMILAR UNITS 60,000 POUNDS AND UNDER (Cont)

Item	No. of pieces	Description
M	1 each unit -----	2-in. x 6-in., length to suit. Apply to top of tank, under turret gun barrel, and secure with one piece of $\frac{1}{2}$ -in. high-tension band over gun barrel and secured to each side of brace with two 6d nails. Not required when gun is secured with built-in gun brace.
N	2 each unit -----	$\frac{1}{2}$ -in. high-tension bands. Apply one to each side of gun barrel. Not required when gun is secured with built-in gun brace.

When necessary to extend floor for the application of item G on units loaded on car floor, see figure 1-B, section I, AAR Loading Rules.

For loads superimposed above the car floor follow method illustrated in figure 37.

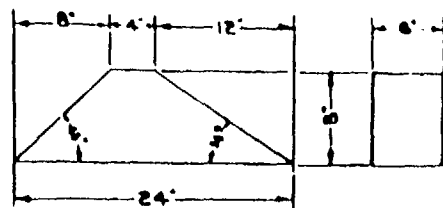
Turret gun should be in straightforward position, and turret lock handwheel and elevating mechanism handwheel must be wired to prevent rotating.

When tiedown rods are found slightly loose in transit, they need not be tightened.

Handbrakes must be set and levers wired or blocked.

See General Rules for further details.

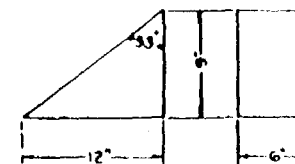
# V. MATERIAL PATTERNS



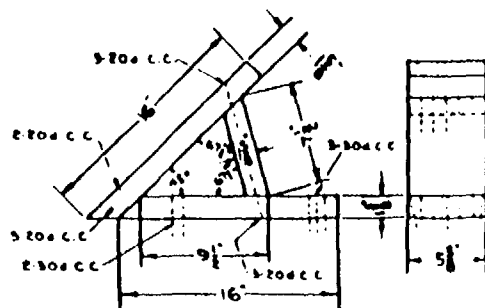
PATTERN 16



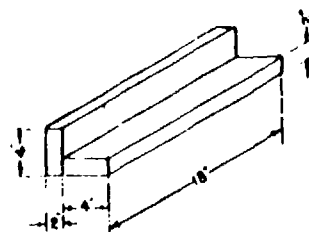
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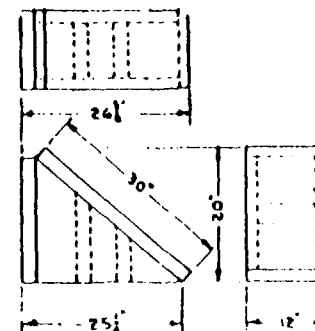
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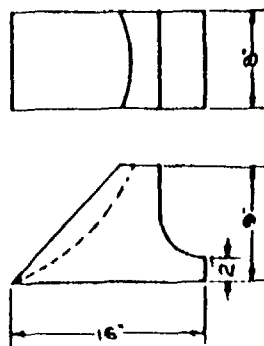
PATTERN 17



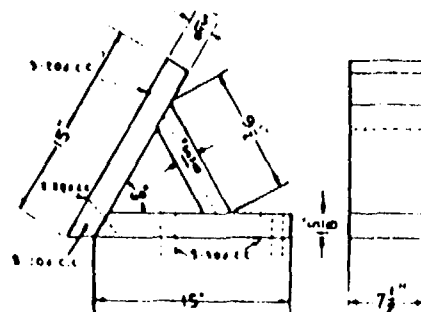
PATTERN 20



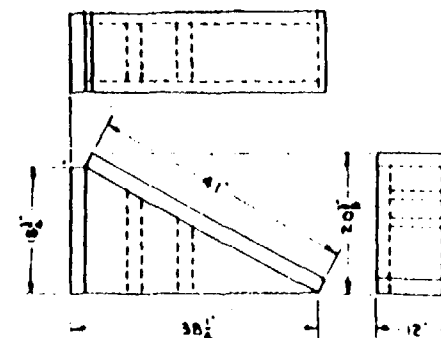
PATTERN 30



PATTERN 18



PATTERN 24



PATTERN 31